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| APPLICATION NO. | FILING DATE | FIRST NAMED INVENTOR | ATTORNEY DOCKET NO. | CONFIRMATION NO. |
|-----------------|-------------|----------------------|---------------------|------------------|
| 09/916,256 | 07/30/2001 | Wayne Lee Borgen | 8200.495 | 8665 |

7590 05/07/2003

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| EXAMINER |
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YEAGLEY, DANIEL S

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| ART UNIT | PAPER NUMBER |
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3611

DATE MAILED: 05/07/2003

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/916,256

Applicant(s)

BORGEN ET AL.

Examiner

Daniel Yeagley

Art Unit

3611

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 12 March 2003.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-8, 10-18 and 22 is/are pending in the application.
- 4a) Of the above claim(s) 9 and 19-21 is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-8, 10-18 and 22 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☒ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 30 July 2001 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on _____ is: a) ☐ approved b) ☐ disapproved by the Examiner.
- If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

- 13) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
- a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

- 1) ☐ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449) Paper No(s) _____.
- 4) ☐ Interview Summary (PTO-413) Paper No(s). _____.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: _____.

Art Unit: 3611

DETAILED ACTION

Election/Restrictions

1. Applicant's election in Paper No. 4 of invention I, Species A; drawn to figure 1 – 4 and identified claims 1-8 and 10-18 as readable thereon and as such claims 9 and 19 through 21 were not considered in the subsequent action and cited on form PTO-326 as being withdrawn and as such newly amended claim 9 was not considered.

The newly added claim 22 in paper number 6 failed to indicate if is claim is readable on the elected species as required by MPEP § 809.02(a); but was examined as such.

Because applicant did not distinctly and specifically point out the supposed errors in the restriction requirement, the election was treated as an election without traverse (MPEP § 818.03(a)).

2. This application contains claims drawn to an invention nonelected in Paper No. 4. A complete reply to the final rejection must include cancellation of nonelected claims or other appropriate action (37 CFR 1.144) See MPEP § 821.01.

Applicant is reminded that upon the cancellation of claims to a non-elected invention, the inventorship must be amended in compliance with 37 CFR 1.48(b) if one or more of the currently named inventors is no longer an inventor of at least one claim remaining in the application. Any amendment of inventorship must be accompanied by a request under 37 CFR 1.48(b) and by the fee required under 37 CFR 1.17(i).

Specification

3. The disclosure is objected to because of the following informalities: the terminology used in the claims should be consistent with the terms cited in the specification;

- ✓ Page 5, line 6, before the word "front" insert --first drive axle;--.
- ✓ Page 5, line 7, delete the word "an" and insert --a second drive axle;--.
- ✓ Page 5, line 10, after the word "shaft" insert --; drive train--.
- ✓ Page 5, line 15, after the word "assembly" insert --2 and 8--.
- ✓ Page 6, line 11, change numeral "10" to numeral --2 and 8--.
- ✓ Page 6, line 22, before the word "linking" insert --interconnecting--.
- ✓ Page 7, line 11, after numeral "24" insert --, 25--.

Appropriate corrections are required.

Claim Objections

4. Claim 18 is objected to because of the following informalities:

no response
Claim 18, line 2, the term "whereby" does not define any structure and accordingly cannot serve to distinguish. In re Mason, 114 USPQ 127, 44 CCPA 937 (1957).

Appropriate correction is required.

Claim Rejections - 35 USC § 112

5. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

Art Unit: 3611

6. Claims 1-8, 10-18 and 22 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

The claims are redundant with terms that lack sufficient antecedent basis;

Claims 4, 6 – 8, 10 – 18 and 22, first line; the terms “double disconnect *assembly*” lack antecedent basis; change the word “assembly” to --system--.

✓ Claim 5, line 4, the term “said first and second side gears” lack antecedent basis. Note claim 5 is dependent upon claim 1 and the side gears were introduced in claim 4.

✓ Claim 6, line 3, the term “said transverse axis” lack antecedent basis, because the axis was introduced in claim 4.

✓ Claim 8, line 2, the term “said cross pin” lack antecedent basis, because the pin was introduced in claim 4.

Claim 14, the terms “said first clutch members” and “said second clutch members” lack antecedent basis, because the clutch members were introduced in claim 10.

Claim 17, line 3, the terms “said first and second driven gears” lack antecedent basis.

Claim 18, line 3, the term “the splines” lack sufficient antecedent basis.

Claim Rejections - 35 USC § 102

7. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

Art Unit: 3611

8. Claims 1, 2,³_^ 4, 13 and 18 are rejected under 35 U.S.C. 102(b) as being anticipated by Balmforth '979.

Balmforth shows an multiply axle disconnect system for a tandem vehicle (figure 4-7) which comprises a first drive axle 87 (figure 4), a second drive axle (auxiliary drive 94) driven by a drive train (prop shaft 91 via shaft 95), first clutch assembly at numeral 73 (like that shown in figure 3) which is shown in front of numeral 40 of figure 7, such that the first clutch assembly selectively engages and disengages the drive train 91, a second (apparent identical) clutch assembly which is shown in front of numeral 95 of figure 7 behind a differential assembly (like that shown in figure 1), wherein the second clutch assembly selectively engages and disengages the axle shafts 111 and 112 of the second drive axle⁹⁴ from a differential assembly at 92 by disengaging shaft 98 from the second drive axle as suggested in figure 7, the disconnect system of Balmforth further shows a primary rear drive axle 93, wherein the differential assembly comprises pinion gears 68 mounted with respect to a cross pin 67, side gears 69 rotatable about a transverse axis of axle shafts (like that shown in figure 2) having a splined interconnection consisting of complimentary splines of axial spaced rows of gear teeth on the outer surfaces of the axles and the inner bore surface of the side gears and is deemed readable on the amended instant claims as broadly recited as now understood.

Art Unit: 3611

Claim Rejections - 35 USC § 103

9. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

10. Claims ~~3~~, 5 - 8, 10 - 12, 14 - 17 and 22 are rejected under 35 U.S.C. 103(a) as being unpatentable over Balmforth '979 in view of Hunt '720.

Balmforth as stated above discloses an axle disconnect system for a tandem vehicle which comprises a first and second drive axle, a first and second clutch assembly such that the first clutch assembly selectively engages and disengages the drive train 91 and the second clutch assembly shown in front of numeral 95 of figure 7 behind a differential assembly selectively engages and disengages the interconnected axle shafts 111 and 112 of the second drive axle from the differential assembly as broadly claimed and further shows drive axle shafts having first and second clutch members (splines) on the inner bores of a gear and the outer surface of the drive shafts which includes a clutch collar at numeral 76 for selectively engaging and disengaging the axle shafts 111, 112 of the second drive axle but lacked the first and second axle shafts being axially slidable to mutually disconnect the axle shafts from said first and second side gears as best understood, wherein the axle shafts are slidable with respect to the differential assembly, wherein when the first and second clutch assemblies are not engaged the differential assembly is in a non-rotating state.

Art Unit: 3611

Hunt shows a dual disconnect system for a tandem (four-wheel drive) drive assembly that teaches the art of incorporating clutch means that are axially slidable in a differential assembly to engage and disengage two axially aligned axle shafts of a drive axle of a motor vehicle (Figure 1, column 1 – 5), wherein the first and second axle shafts 24 and side gears 20 are axially slidable on surfaces of complementary splines 22,23,31 (pairs of axial spaced rows of gear teeth; figure 5, column 3) and interconnected by a interconnecting member (linking rod 34) which passes through the cross pin 16 (figure 4) and extends from the inboard ends of the axle shafts 24 (figure 1) to translate simultaneous axial movement along a transverse axis by first and second clutch members (splines 22,23 and 31), and further reveals the prior art of a clutch collar 36 mounted on one of the axle shafts, actuator which includes an arm 40 for engaging the clutch collar for slidably moving the axle shafts between clutch engaging and disengaging positions by use of a compression spring 42.

It would have been obvious to one of ordinary skill in the art at the time the invention was made to have modified the dual axle disconnect system of Balmforth tandem driven vehicle with an alternative clutch type drive coupling positioned between the axle shafts of the drive axle as shown in Hunt in place of the drive train clutch coupling of Balmforth for a more enhanced clutch type drive coupling as disclosed by Hunt for selectively engaging axle shafts of the drive axle of a dual disconnect drive assembly for simultaneously driving the side gears of the differential to obtain the advantages of greater fuel economy, less wear and noise, fewer parts and a more compact design as disclosed by Hunt dual disconnect drive assembly caused by back driving of the differential (column 1) for a tandem wheel drive assembly and is considered a simple matter of design choice dependent upon users preference.

Response to Arguments

11. Applicant's arguments filed 2/12/03 have been fully considered but they are not persuasive. Balmforth '979 tandem driven vehicle as stated above and as modified by Hunt '720 as stated above disclose a double disconnect system for a tandem wheel drive assembly as broadly claimed and as now understood, wherein Balmforth as modified by Hunt discloses an axle disconnect assembly for a tandem wheel driven vehicle whereby an axle is disconnected from its associated differential as claimed and is viewed as being obvious to one of ordinary skill in the art to have combined the art of the double disconnect assembly of Hunts tandem wheeled drive assembly to the tandem wheeled drive assembly of Balmforth.

12. In response to applicant's argument that the examiner's conclusion of obviousness is based upon improper hindsight reasoning, it must be recognized that any judgment on obviousness is in a sense necessarily a reconstruction based upon hindsight reasoning. But so long as it takes into account only knowledge which was within the level of ordinary skill at the time the claimed invention was made, and does not include knowledge gleaned only from the applicant's disclosure, such a reconstruction is proper. See *In re McLaughlin*, 443 F.2d 1392, 170 USPQ 209 (CCPA 1971).

Conclusion

13. **THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

Art Unit: 3611

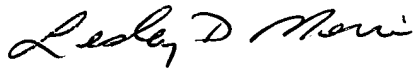
A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

14. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Daniel Yeagley whose telephone number is 703-305-0838. The examiner can normally be reached on Mon. - Fri; first Friday off.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Lesley D Morris can be reached on 703-308-0629. The fax phone numbers for the organization where this application or proceeding is assigned are 703-872-9326 for regular communications and 703-872-9327 for After Final communications.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is 703-308-1113.

D.Y.
April 30, 2003


LESLEY D. MORRIS
SUPERVISORY PATENT EXAMINER
TECHNOLOGY CENTER 3600